Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Promotion of Spectrum Efficient	)	WT Docket No. 99-87
Technologies on Certain Part 90	)	
Frequencies	)	
	)	
	)	

To: The Commission

Comments of EIBASS

Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) hereby respectfully submits its comments in the above-captioned rulemaking relating to the narrow banding of certain Part 90 Land Mobile radio service. Specifically, these EIBASS comments are in response to the Commission's November 2, 2009, Public Notice, DA-09-2364, *Wireless Telecommunications Bureau and Public Safety and Homeland Security Bureau Seek Comment on National Public Safety Telecommunications Council (NPSTC) Petition for Stay of Interim Narrowband Implementation Dates*. Because narrow banding deadlines might be deemed to also apply to certain Part 74, Subpart D, Remote Pickup (RPU) Broadcast Auxiliary Services (BAS) stations, EIBASS is submitting its comments.

I. The Commission Provided Part 74 RPU Stations With Indefinite Grandfathering

1. In the November 13, 2002, ET Docket 01-75 Report and Order (R&O), the Commission narrow banded the 150 MHz and 450/455 MHz band RPU channels into 6.25-kHz wide segments, and allowed the aggregation of up to eight such segments for BAS operations. The ET 01-75 R&O also required RPU channels with bandwidths of 30 kHz or less to comply the Part 90 technical standards. The R&O stated, at Paragraph 114,

> By harmonizing all RPU channels and equipment with the Part 90 PLMR channel plan, licensees will benefit from economies of scale resulting from the use of equipment consistent with Part 90 operations. Additionally, this will simplify station coordination and reduce the potential for harmful interference.

2. In the next paragraph the Commission gave RPU licensees three years to convert to narrow band channels. However, the Commission also provided a grandfather clause allowing RPU stations still operating on wideband channels after that date to indefinitely continue on the non-

narrow band channels on a secondary basis. See the attached Figure 1 excerpt from the ET 01-75 R&O.

3. In its April 4, 2003, Petition for Reconsideration (SBE Recon), the Society of Broadcast Engineers, Inc. (SBE) asked the Commission to clarify whether 450/455 MHz RPU stations with channel widths of 20 to 25 kHz must reduce their channels to just 12.5 kHz, or whether channels widths of 18.75 or 25.00 kHz would remain acceptable. See the attached Figure 2 excerpt from that SBE filing.

4. At Paragraph 13 of the December 20, 2003, ET Docket 01-75 Memorandum, Opinion and Order (MO&O), the Commission noted, in response to another portion of the SBE Recon, "the Commission does not routinely dismiss applications for underutilization of spectrum." At Paragraph 14, regarding narrow banding of RPU BAS channels, the Commission stated

> The rules adopted in the R&O, which permit narrowband channels to be stacked to form wider channels, have not changed and are not restricted by the Part 90 limitations on channel bandwidth. Thus, licensees may continue to stack these channels as needed, up to a maximum of 50 kHz.

5. EIBASS notes that Paragraph 14 of the MO&O did not place any sunset date on the grandfather clause adopted in the ET 01-75 R&O for allowing RPU stations to continue to operate on their existing channel plans, so long as doing so did not create a conflict with RPU stations migrating to narrowband RPU channels; that is, the non-narrow banded operation would be on a secondary basis, but with no time limit. See the attached Figure 3 excerpt from the MO&O.

6. Part 74 RPU channels are the back stage means that provide critical support for many types of center stage Part 73 broadcasts. For this reason many features of AM, FM and high-definition (HD) programs would not be able to function without the possibility of continued wide band Part 74 channels. Indeed, it is for this reason that the ET Docket 01-75 decision to allow continued broad band operation to BAS RPU stations on a secondary basis has worked so well: EIBASS is not aware of any areas where broadcasters have converted their RPU operations to narrow band, and thus continued broad band operation remains possible.

7. Part 74 RPU channels are fundamentally different than Part 90 communications radio channels. First, FCC Rules prohibit the use of Part 90 channels for any form of broadcasting:

> Section 90.415(a) Stations licensed under this part shall not:
> (a) Transmit program material of any kind for use in connection with broadcasting;

Secondly, Part 74 has specific priority of uses. Section 74.403(b) lists in order the priority that each potential use has. Emergency communications has the highest priority and the next highest priority is Program Material To Be Broadcast. In practice stations share channels with coordination in order to maximize the use of the limited spectrum.

8. Many intended-for-broadcast RPU audio feeds depend on talent in the studio interacting with talent in the field, and thus dedicated analog channels are not merely critical, but are an indispensable and essential condition that can make or break a broadcast. Digital channels will not work in such cases due to latency issues. While some RPU applications such as news crew dispatching follow the land mobile communications model, many do not. The "one size fits all" approach might work well for Part 90 applications, but not for many Part 74 applications. Part 90 communications needs to be "broadcast quality." The wider 50 kHz bandwidth channels are routinely used for Program Material To Be Broadcast which per Section 74.403(b) has priority over all other uses except emergency communications. Even 25 kHz wide channels are routinely used to provide news and traffic information that is directly broadcast. In some cases station Program Directors have insisted on higher than "communications quality" transmissions on their stations for news and traffic information. In other words, live-to-air communications are fundamentally different from background operations. The Commission needs to allow broadcasters a means of continuing their wideband RPU operations where needed, and the best method is to simply affirm the present grandfather option.

9. EIBASS further notes that Part 74 spectrum is also a core resource for emergency response when landlines, cell phones, and other communications means are impaired or destroyed. During such periods RPU transmissions are more likely to end up on the air, so the better voice quality of a wide band, no-latency analog signal is again desirable[1].

II. Commission's March 22, 2007, Public Notice Regarding PLMRS Stations

10. EIBASS notes that on March 22, 2007, the Commission issued a public notice, *FCC Addresses Rules for Private Land Mobile Radio Systems To Transition To 6.25 kHz Narrowband Technology*. EIBASS notes that the Private Land Mobile Radio Service (PLMRS) service is a Part 90 radio service, not a Part 74 BAS radio service. A "one size fits all" procedure has difficulty in coping with Part 74 rules specifically crafted to support broadcast operations. But the Part 74 rules are, of necessity, different from the Part 90 PLMRS rules. While some RPU

[1] Latency is also a critical issue when talent in the studio is interacting with talent in the field. It is impossible to carry on a coherent dialog if the only means for field talent to hear the studio is by monitoring HD off the air or with a digital voice channel. Both introduce unacceptable latency.

operations follow the conventional two-way, voice-grade only land mobile communications model, other RPU operations do not. Broadcast quality[2] traffic, news, sports, remote broadcasts, and Telemetry Return Links (TRLs)[3], are good examples.

III. Summary

11. EIBASS requests that the Commission confirm that Part 74 RPU stations, including TRL stations, may continue to operate on their legacy 150 MHz and 450/455 MHz channels on a primary basis with no time limit. EIBASS further asks the Commission to ensure that the ULS be capable of supporting such indefinitely grandfathered BAS RPU stations. Doing otherwise would deprive broadcasters of an essential technical resource for day-to-day programming as well as when broadcasters must get information to the public during declared emergencies.

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[2] The term "broadcast quality" as used herein in reference to Part 74 RPU operations means that the RPU audio that sounds nearly as good as, or as good as, audio originated from the studio. For Part 73 AM stations, RPU frequency response from 100 Hz to 5 kHz is commonly achieved. For FM or HD, broadcast quality would translate to aural response at or close to 50 Hz to 15 kHz.

[3] TRLs are narrow, 10 kHz wide data channels that allow broadcasters to comply with the Commission's Part 73 rules for transmitter monitoring without having to resort to expensive and often unavailable landline data channels at transmitter sites. Such sites are often located on mountaintops and other remote locations where even if data circuits are available, their cost and reliability are serious drawbacks.

List of Figures

12. The following figures or exhibits have been prepared as a part of these EIBASS WT Docket 99-87 comments:

1. Paragraph 115 excerpt from the November 13, 2002, ET Docket 01-75 R&O
2. Excerpt from Section IV of the April 4, 2003, SBE Petition for Reconsideration of the ET Docket 01-75 R&O
3. Paragraphs 13 and 14 excerpts form the October 20, 2003, ET Docket 01-75 MO&O.

Respectfully submitted,

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WT Docket 99-87: Narrowband Land Mobile Channels

ET Docket 01-75 R&O, Paragraph 115 Excerpt

to dispatch and operational traffic.[219] To minimize the impact on current licensees, SBE recommends that no new restrictions be imposed on allowable types of modulation on these channels. In addition, it supports the proposal to provide a three year transition period for licensees to migrate to the new channel plan, including the option to remain on current channels on a secondary basis after three years.

113. With respect to technical parameters, SBE concurs with our proposal to apply the Part 90 emission masks and frequency stability requirements to narrow band Remote Pickup stations. It urges, however, that we maintain the current requirements for 25 kilohertz or wider channels in Groups N_1 and N_2 and wideband channels in Groups R and S. It states that coordinators have already implemented plans, including adjacent channel offsets, to accommodate these wide channels. SBE also recommends that we harmonize the Group P channels with the plan proposed for the Group N_1 and N_2 channels by rechannelizing them to 6.25 kilohertz stackable to 12.5 kilohertz. Finally, SBE recommends grandfathering existing licensees using 10 kilohertz Group P channels.[220]

114. *Discussion*. As described above, the only commenter on this issue, SBE, supports our proposals with some modification. We agree with their suggestions and adopt our proposals as modified by those suggestions. Therefore, we will amend the channel plan for 150 MHz and 160 MHz Remote Pickup stations to list channels every 7.5 kilohertz and allow licensees to stack up to four channels for a total of 30 megahertz. In addition, we will modify the Group N1 and N2 450 MHz channels to list channels every 6.25 kilohertz and allow licensees to stack up to eight channels for a total of 50 megahertz. As suggested by SBE, we will also modify the Group P channels to list them every 6.25 kHz and allow licensees to stack up to two channels.[221] Further, we will require new Remote Pickup station equipment designed to operate on channels 30 kilohertz wide or less to comply with the Part 90 technical standards, including emission mask, frequency tolerance, and transient frequency behavior. By harmonizing all RPU channels and equipment with the Part 90 PLMR channel plan, licensees will benefit from economies of scale resulting from the use of equipment consistent with Part 90 operations. Additionally, this will simplify station coordination and reduce the potential for harmful interference.

115. To ease the transition to this new channel plan, we adopt our proposal to provide a three-year period for licensees operating on the channels adopted in 1984 to modify their licenses to the new channels. After three years, they may remain on their current channel assignments, but on a secondary, non-interference basis. Consistent with our action for the N_1 and N_2 channels we will also provide three years to licensees operating on the 10 kilohertz P channels to modify their licensees to the new channel plan. After that time they may remain on their current channel assignment but on a secondary basis. This will provide for a smooth transition to the new channels where incumbent operations will not inhibit the growth of systems on the new frequency plan.

6. Federal Narrowbanding of 162-174 MHz Band Land Mobile Frequencies

From the April 4, 2003 SBE Petition for Reconsideration

SBE Petition for Partial Reconsideration
ET Docket 01-75, Revisions to the BAS Rules

BAS applications specifying bandwidths of less than 25 MHz be routinely granted, but that such applications are encouraged as spectrum efficient. Further, SBE asks the Commission to confirm that more than one narrowband digital TV BAS link can be licensed in a single conventional 25-MHz wide TV BAS channel; that is, that an 8-VSB V-Stream STL with a bandwidth of 6.5 MHz does not have to be in the center of a conventional 25-MHz wide TV BAS channel.

IV. 450/455 MHz RPU Channel Splits

10. Paragraph 114 of the R&O requires Remote Pickup (RPU) stations with bandwidths of 30 kHz or less to comply with the Part 90 technical standards. However, Part 90 Land Mobile technical standards allow maximum channel widths of just 12.5 kHz, with seems inconsistent with the language at the start of Paragraph 114 that the Commission would allow 450 MHz Group N1 and N2 RPU stations to aggregate up to eight 6.25 kHz bandwidth segments, to achieve channel bandwidths of up to 50 kHz. Most if not all narrowband radios currently available in this band are intended for Land Mobile uses, where audio quality standards are far different from broadcast quality. Much live radio remote programming comes into the station via 450 MHz radios, and much of that is done using 25-kHz wide channels, where the audio quality of present analog radios is just acceptable. There has already been significant controversy and disruption of some weather warnings due to the perceived unacceptability of the National Weather Services' "Perfect Paul" digitized voice for broadcast to the general public. Forcing BAS 25 kHz channels to narrowband (meaning digital) with the present state of the art in available digital voice compression, targeted to Land Mobile intelligibility and so different from what the general public is accustomed to hearing, would most likely disrupt radio remote news and sports operations with the same kind of problems.

11. SBE therefore asks the Commission to clarify whether 450/455 MHz RPU stations now widely used for such purposes as traffic reporting with channel widths of 20 to 25 kHz must reduce their channels to just 12.5 kHz, or whether channels widths of 18.75 kHz (*i.e.*, three 6.25-kHz segments) or 25.0 kHz (*i.e.*, four 6.25-kHz segments) would remain permissible. If not, the SBE asks how the Commission intends to make its decision acceptable to the listening public.

licensees to electively register fixed receive sites associated with BAS TVPU stations in the ULS.[22] SBE states that this information would be used to protect TVPU receive sites, especially during frequency coordination along international borders.[23] As noted by SBE, frequency coordination of BAS TVPU stations necessitates information on TVPU receive sites, and registration of such receive sites may offer some benefit to frequency coordination by facilitating their identification. However, we find that, because registration of BAS TVPU receive sites in the ULS was neither at issue nor addressed by the *R&O*, it is beyond the scope of this Memorandum Opinion and Order. At this time, we find that such elective registration is unnecessary.[24] However if parties continue to believe that such a requirement would be beneficial they may file a petition for rulemaking seeking the imposition of TVPU receive site registration.

12. Reduced Bandwidth on TV BAS Channels: SBE seeks clarification of several issues related to the use of digital links in the TV BAS bands. First, SBE asks that the Commission clarify that the Commission will not routinely dismiss applications specifying narrowband digital emissions.[25] SBE notes that only a wideband (25 MHz) channel plan currently exists for the 7 and 13 GHz bands, but some newer digital equipment operates with only 6.5 MHz bandwidths. Second, SBE asks that the Commission clarify that a narrowband channel may operate on a frequency offset from the channel center.[26] Finally, SBE asks the Commission to clarify that licensees may stack multiple narrowband emissions within a channel.[27]

13. As an initial matter, we note that the Commission does not routinely dismiss applications for underutilization of the spectrum.[28] If no other deficiencies exist, an application for narrowband emissions within a wideband channel will not be routinely dismissed.[29] In addition, we note that the Commission grants licenses for these bands by specifying a band of operation, not a specific operating frequency.[30] Therefore, a licensee has flexibility to locate its emissions within a channel where it is most advantageous. Finally, to promote spectrum efficiency, we note that the rules allow licensees to multiplex

[22] *See* SBE Petition at 5.

[23] *Id.* at 5. In addition, we note that in its related Request for Temporary Stay of PCN Requirements in the *R&O* (Stay Request), SBE also asserts that without this information, a commercial frequency coordinator, unfamiliar with the local TV BAS environment, would be unable to undertake a valid coordination based on just the ULS. *See* SBE, Request for Temporary Stay of PCN Requirement in the *R&O* in ET Docket 01-75, filed April 4, 2003 (Stay Request), at 5.

[24] Because such registration as requested would be elective, and not mandatory, we question the effectiveness of promulgating such changes to the ULS as requested by SBE. Nevertheless, we note that if SBE or any members of the BAS community desire a registry, *e.g.*, a website, they are free to establish it without our involvement, whether by themselves or via a third party, such as a commercial frequency coordinator.

[25] *See* SBE Petition at 3-4. SBE asserts that applications for such emissions have in the past been returned for underutilization of the channel.

[26] *Id.* at 4.

[27] *Id.*

[28] However, we note that the Commission always strives to ensure efficient spectrum utilization.

October 20, 2003 ET 01-75 MO&O

multiple signals within a channel [31] Under this rule, licensees may provide information using multiple narrowband channels within the larger channel subject to the condition that the composite emissions meet the rules for out-of-band emissions. In these instances, we note that spectral efficiency will be further enhanced if the presence of systems operating on frequencies other than the channel center is accounted for in the frequency coordination process

14 RPU BAS with 20 kHz and 25 kHz Bandwidths: Finally, in its Petition, SBE notes that the Commission, in the *R&O*, rechannelized the BAS RPU 450/455 MHz band into 6 25 kHz blocks, stackable to 50 kHz maximum channel bandwidth, and adopted certain Part 90 technical standards, including the Section 90.210 emission mask requirements, for authorized bandwidths of 30 kHz or less.[32] SBE, claiming that the Part 90 technical standards only allow a maximum channel width of 12.5 kHz, requests that we clarify that licensees may continue to use channel widths up to 25 kHz.[33] The rules adopted in the *R&O*, which permit narrowband channels to be stacked to form wider channels, have not changed and are not restricted by the Part 90 limitations on channel bandwidth. Thus, licensees may continue to stack these channels as needed, up to a maximum channel bandwidth of 50 kHz. However, we encourage licensees to operate with spectrally efficient equipment and use the minimum bandwidth necessary for their operation

PROCEDURAL MATTERS

A. Final Regulatory Flexibility Certification